

Spite of these defects, which we hope will not prevent translation of this edition (as they did of the first), physiology will be greatly advanced by this valuable work. We shall await the second volume with even greater interest, hoping that it may be completely remodeled, for *Kraftwechsel* needs today a radically different approach and treatment from that which it received in 1881.—C. R. B.

MINOR NOTICES.

BLACK ROT of the cabbage, by Erwin F. Smith, forms Farmers' Bulletin no. 68, recently sent out by the U. S. Department of Agriculture. It is a more popular account of the same study to which attention was called in the January GAZETTE, with additional field observations and rules for prevention.—J. C. A.

THE DIVISION OF BOTANY of the United States Department of Agriculture has issued a bulletin describing the camphor tree, its uses, conditions of successful cultivation, a map showing the area of the United States wherein it might be grown, together with some information as to the commercial outlook for camphor.—C. R. B.

PROFESSOR M. A. BRANNON, of the State University, has published a report on the grasses and forage plants of North Dakota. The field work was begun under a commission from the Division of Agrostology of the U. S. Department of Agriculture. The report contains valuable notes concerning distribution, nature of soil, etc.—J. M. C.

THE MOVEMENTS of plants was the subject of a lecture by Professor D. T. MacDougal, of the University of Minnesota, before the Institute of Jamaica, given in June last, while on a visit to the island in the interests of the proposed tropical laboratory. It is printed in the *Bulletin of the Bot. Department, Jamaica*, for Oct.-Nov., and has been distributed separately. It gives a general review of the subject, with illustrations drawn from the common plants of the island.—J. C. A.

MR. N. A. COBB, of the Department of Agriculture, New South Wales, sends us his "Letters on the diseases of plants," a pamphlet of 54 pages issued by the Department at Sydney. It is a compilation of letters written in answer to correspondents who have requested information from the department regarding various plant diseases. The information is put in a popular yet accurate way, and the illustrations, to the number of one hundred, are excellent. The writer shows himself well in touch with the extensive work of this kind carried on in the United States.—C. R. B.

THE SEVENTH CONTRIBUTION from the Botanical Department of the Agricultural College of Iowa is devoted to a list of plants collected in the

District of Cienfuegos, Province of Santa Clara, Cuba, in 1895-6, by Robert Combs. The flora of Cuba in general is discussed, the statement being made that it is "interesting, not only for its great number of endemic types, but also for the striking characters of those types, their occurrence, distribution, and economic uses." The flora very closely resembles that of Central and South America, and is said to differ more from that of adjacent Florida, than does the latter from the flora of Canada. The catalogue is a very full one, and is accompanied by ten well-prepared plates.—J. M. C.

THE NEW *Journal of Applied Microscopy*, announced by the Bausch and Lomb Optical Company, has made its appearance. It is devoted to microscopical instruments and technique viewed from a practical standpoint. If the standard set by the first number is maintained the new journal will prove very useful to teachers of botany and zoology, and microscopists in general. Besides many suggestions regarding the use of lenses and other apparatus, this number contains valuable directions for the study of the myxamœbæ and plasmodia of the Mycetozoa. Methods of more direct interest to zoologists are also contained in this initial number.—C. J. C.

THE MOST RECENT *Bulletin*³ from the Iowa State University contains an account of the ferns collected by B. Shimek on the Nicaragua botanical expedition of the University in 1893. The report is exceedingly well done, the greatest care apparently having been taken in the determinations and in the organization of all available data. The author has done well to append to each genus a list of all species reported from Nicaragua not included in his collection. Twenty remarkably good plates accompany the contribution. The total number of species and varieties reported from Nicaragua is 198, representing 39 genera, of which 126 species and 32 genera were collected by Mr. Shimek. The report adds one new species, seven new to Central America, and thirty-seven new to Nicaragua. It seems that of the species collected by Mr. Shimek eighty-one are terrestrial, forty-one are epiphytic, and two have adopted both habits.—J. M. C.

THE REVISION of the genera of Hepaticæ is progressing in the hands of various American students with considerable rapidity. In addition to the general treatment of the whole group by Dr. Underwood in the Systematic Botany of North America, which may be expected shortly, Mr. Alex. W. Evans has recently given us a full account of the North American species of Frullania, accompanied by fifteen plates.⁴ With the exception of Jungermania, Frullania is the richest in species of all our hepatic genera. Dr. Evans

³ Bull. from Lab. Nat. Hist. 4: 95-224. 1897.

⁴ EVANS, ALEXANDER W.—A revision of the North American species of Frullania, a genus of Hepaticæ. Transactions of the Connecticut Academy of Sciences 10: 1-39. N. 15. May 1897.

recognizes twenty-two species, of which two are imperfectly known. The drawings, illustrating the species, made by the author, are admirable in their clearness and fullness. The following changes from the names in Gray's Manual are noted: *F. Pennsylvanica* has already been transferred to *Jubaea*; *F. saxicola* is referred to *F. Virginica*, and *F. fragilifolia* Aust. (not Tayl.) to *F. Selwyniana* Pearson; *F. æolotis* is *F. riparia* Hampe; and *F. dilatata* is described as *F. Brittoniæ*, n. sp.

Mr. Marshall A. Howe has lately examined the species of *Porella* belonging to North America. Schiffner in Engler and Prantl's *Pflanzenfamilien* rejected the name *Madotheca*, which Dumortier adopted for this genus, and also considered *Porella* a *nomen nudum* of Linnæus. But Howe, backed by the recent examination by Underwood of the Dillenian plant at Oxford, follows Lindberg and others in the use of *Porella*. He recognizes eight species. The five of Gray's Manual are pretty well changed. *P. Sullivantii* is referred to *P. pinnata*; *P. Thuja* to *P. platyphylla*; while *P. dentata* becomes *P. rivularis* (Nees) Trevis.—C. R. B.

AFTER LONG interruption the *Contributions* from the Botanical Laboratory of the University of Pennsylvania have been resumed by the publication of no. 3 of vol. I. It contains three papers: A chemico-physiological study of *Spirogyra nitida*, by Mary E. Pennington, Ph.D.; On the structure and pollination of the flowers of *Eupatorium ageratoides* and *E. cælestinum*, by Laura B. Cross, Ph.D.; and Contributions to the life-history of *Amphicarpæa monoica*, by Adeline F. Schively, Ph.D. The first of these papers is particularly meritorious. Not only does it bring out some interesting new facts which are connected with those already known, but it shows ingenuity in the devising and execution of the experiments. Particularly useful to other workers will be the carefully described set of color screens, by means of which monochromatic light may be secured. They seem a decided improvement on other formulæ. Perhaps the most interesting conclusion is that the influence of monochromatic light on the growth of *Spirogyra* is due mainly to the effect of the particular light on diastase.

The second paper is very brief. By her experiments the author is led to the conclusion that self-pollination in the two species of *Eupatorium* is very rare indeed, and that even when it does occur the fruits are of weak germinating capacity. The visits of insects, however, insure a large percentage of good fruits.

The third paper is a very detailed account of the morphology and physiology of *Amphicarpæa*; a useful catalogue of facts, but not correlated with others by the author. One fact of interest is that this plant has very rapid circumnutation movements, completing a circuit in 51 minutes.—C. R. B.

⁵ HOWE, MARSHALL A.—The North American species of *Porella*. Bulletin of the Torrey Botanical Club 24: 512-527. N 1897.